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December 3, 2002

U. S. Nuclear Regulatory Commission
Document Control Desk
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Washington, DC 20555

Subject: Arkansas Nuclear One - Unit - 1
Docket No. 50-313
License No. DPR-51
Licensee Event Report 50-313/2002-002-00

Dear Sir or Madam:

In accordance with 10CFR50 73(a)(2)(iv)(A), enclosed is the subject report concerning an automatic actuation of the Reactor Protection System. The enclosure contains no commitments.

Sincerely,

Sherrie R. Cotton

Sherrie R. Cotton
Director, Nuclear Safety Assurance

SRC/dh

enclosure

IE22

cc: Mr. Ellis W. Merschoff
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NRC FORM 366 (1-2001) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB NO. 3150-0104 EXPIRES 6-30-2001

Estimated burden per response to comply with this mandatory information collection request 50 hours. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET NUMBER (2)	PAGE (3)
Arkansas Nuclear One - Unit 1	05000313	1 OF 4

TITLE (4) Main Turbine Trip due to Binding of the Mechanical Trip Spool Valve Resulted in an Automatic Actuation of the Reactor Protection System

EVENT DATE (5)			LER NUMBER (6)			REPORT DATE (7)			OTHER FACILITIES INVOLVED (8)	
MO	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO	MO	DAY	YEAR	FACILITY NAME	DOCKET NUMBER
10	04	2002	2002	002	00	12	03	2002	FACILITY NAME	DOCKET NUMBER

OPERATING MODE (9)	1
POWER LEVEL (10)	042

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR: (Check one or more) (11)

	20.2201(b)		20.2203(a)(3)(i)		50.73(a)(2)(i)(C)		50.73(a)(2)(vii)
	20.2201(d)		20.2203(a)(3)(ii)		50.73(a)(2)(ii)(A)		50.73(a)(2)(viii)(A)
	20.2203(a)(1)		20.2203(a)(4)		50.73(a)(2)(ii)(B)		50.73(a)(2)(viii)(B)
	20.2203(a)(2)(i)		50.36(c)(1)(i)(A)		50.73(a)(2)(iii)		50.73(a)(2)(ix)(A)
	20.2203(a)(2)(ii)		50.36(c)(1)(ii)(A)	X	50.73(a)(2)(iv)(A)		50.73(a)(2)(x)
	20.2203(a)(2)(iii)		50.36(c)(2)		50.73(a)(2)(v)(A)		73.71(a)(4)
	20.2203(a)(2)(iv)		50.46(a)(3)(ii)		50.73(a)(2)(v)(B)		73.71(a)(5)
	20.2203(a)(2)(v)		50.73(a)(2)(i)(A)		50.73(a)(2)(v)(C)		OTHER
	20.2203(a)(2)(vi)		50.73(a)(2)(i)(B)		50.73(a)(2)(v)(D)		Specify in Abstract or NRC Form 366A

LICENSEE CONTACT FOR THIS LER (12)

NAME	TELEPHONE NUMBER (Include Area Code)
Dee Hawkins, Nuclear Safety and Licensing Specialist	479-858-5589

COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT (13)

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX		CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX

SUPPLEMENTAL REPORT EXPECTED (14)			EXPECTED SUBMISSION DATE (15)	MO	DAY	YEAR
YES (If yes, complete EXPECTED SUBMISSION DATE)		NO X				

ABSTRACT (16)

While performing the Main Turbine Overspeed Trip Test with reactor power approximately 42 percent, an automatic actuation of the Reactor Protection System (RPS) occurred. Upon completion of the Overspeed Trip Test, the trip/latch lever failed to fully reset and latch, thereby preventing restoration of the Auto Stop Oil System pressure. When the test lever was released, the turbine tripped resulting in a reactor trip. Plant response to the trip was normal and uncomplicated. The plant was stabilized in hot standby conditions. The direct cause for the Auto Stop Oil System pressure failing to be restored was determined to be binding of the mechanical trip spool valve in a partially tripped condition due to the buildup of corrosion particles and oil-based residue on the spool valve surfaces. The Auto Stop Oil System and the mechanical trip spool valve and associated components were inspected and cleaned or repaired as necessary. Preventive maintenance tasks will be developed requiring routine inspections and flushing of the Auto Stop Oil System. The event was determined to have had minimal safety significance.

A. Plant Status

At the time this event occurred, Arkansas Nuclear One Unit 1 (ANO-1) was in Mode 1 at approximately 42 percent power. Reactor power was being reduced in preparation for a scheduled refueling outage.

B. Event Description

ANO-1 experienced an automatic actuation of the Reactor Protection System (RPS) [JC] during performance of the Main Turbine Overspeed Trip Test.

The Overspeed Trip Test allows testing of the mechanical trip devices of the Main Turbine. When the overspeed trip test lever is taken to the test position, oil pressure from the interface valve to the emergency trip block and overspeed trip mechanism dump valves is blocked. The mechanical trips may then be tested without lowering oil pressure on the interface valve. The overspeed trip test lever must be held in the test position for the duration of the test. Trip functions are then tested by placement of the trip/latch lever in "trip," allowing the Auto Stop Oil pressure to be reduced below the trip setpoint. Upon completion of the Overspeed Trip Test, the trip/latch lever is reset and placed in the "latched" position allowing the Auto Stop Oil System pressure to be restored. The trip test lever is then released.

On October 4, 2002, during power reduction for a scheduled refueling outage, operations personnel commenced testing of the turbine overspeed trip functions. Upon completion of the Overspeed Trip Test, with the unit at approximately 42 percent power, the trip/latch lever failed to fully reset and latch, preventing restoration of the Auto Stop Oil pressure. When the overspeed trip test lever was released, the turbine tripped resulting in a reactor trip.

Prior to releasing the trip test lever, Operations personnel performing the test verified with the Control Room support senior reactor operator that reactor power level was below the RPS Reactor Trip on Turbine Trip setpoint. Subsequent investigation revealed that slight changes in reactor power were being detected by the RPS channels, allowing the Reactor Protection System to cycle in and out of the bypassed condition.

The post trip plant response was normal.

C. Root Cause

Preventive maintenance performed on the overspeed trip/test valve and associated flow orifices was not adequate to detect equipment degradation. In addition, flushing of the Turbine Lube Oil System following refueling and turbine overhaul outages was ineffective for removing moisture from the initial oil placed in the system, thereby creating a corrosion enabling environment.

Oil-based residue and other corrosion products were found on the overspeed trip/test valve surfaces resulting in binding of the mechanical trip spool valve in a partially tripped condition.

System design did not include indication of the Auto Stop Oil System pressure or adequate indication of actual trip/latch lever position to allow verification of conditions prior to releasing the trip test lever.

D. Corrective Actions

The Auto Stop Oil System and associated components were inspected for corrosion and residue buildup and were cleaned or repaired as necessary. The Turbine Lube Oil System reservoir and the oil supply piping were inspected and cleaned and portions of the system were flushed.

A pressure indicator has been installed on the Auto Stop Oil System trip header to allow verification that oil pressure has been restored prior to releasing the trip test lever.

Preventive maintenance tasks will be developed for the Auto Stop Oil and Turbine Trip Systems requiring routine oil flushes and inspections of the overspeed trip valves and orifices.

The Auto Stop Oil System and associated components will be inspected during the next refueling outage to determine if additional actions are needed.

E. Safety Significance

The safety systems operated as expected to initiate the automatic reactor trip. There were no actuations of any Engineered Safety Features System. The plant was established in stable hot standby conditions without complications. Therefore, this event had minimal safety significance.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2)	LER NUMBER (6)			PAGE (3)
		YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	
Arkansas Nuclear One - Unit 1	05000313	2002	002	00	4 OF 4

NARRATIVE (17)

F. Basis for Reportability

An automatic actuation of the Reactor Protection System is being reported in accordance with 10CFR50.73(a)(2)(iv)(A). A report of this event was made to the NRC Operations Center at 2330 CDT on October 4, 2002, in accordance with 10CFR50.72(b)(2)(iv)(B).

G. Additional Information

There have been no previous similar events reported by ANO as Licensee Event Reports (LERs).

Energy Industry Identification System (EIIS) codes are identified in the text as [XX].